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IS 11365 (1985): Representation of local times differentials for information interchange [LITD 14: Software and System Engineering]

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IS : 11365-1985
ISO 4031-1978

(Reaffirmed 2004)

Indian Standard

REPRESENTATION OF LOCAL TIME DIFFERENTIALS FOR INFORMATION INTERCHANGE

(ISO Title : Information Interchange — Representation of Local Time Differentials)

Computers, Business Machines and Calculators Sectional Committee, LTDC 24 [Ref : Doc : LTDC 24 (643)]

National Foreword

This Indian Standard which is identical with ISO 4031 - 1978 'Information interchange — Representation of local time differentials', issued by the International Organization for Standardization (ISO), was adopted by the Indian Standards Institution on the recommendation of the Computers, Business Machines and Calculators Sectional Committee and approved by the Electronics and Telecommunication Division Council.

Wherever the words 'International Standard' appear, referring to this standard, they should be read as 'Indian Standard'.

Cross References

International Standard	*Corresponding Indian Standard*
ISO 2014 Writing of calendar dates in all-numeric form	IS : 7900-1976 Method for writing calendar dates in all numeric form (Technically equivalent)
ISO 2711 Information processing interchange — Representation of ordinal dates	IS : 10935-1983 Representation of ordinal dates (Identical)
ISO 3307 Information interchange — Representations of time of the day	IS : 10934-1984 Representations of time of the day (Identical)

Adopted 28 May 1985

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0 INTRODUCTION

Many applications require that clock time be expressed in a form that can be used to satisfy both local and international interchange requirements. A time differential factor (TDF) is a means of facilitating information interchange by relating local time expressions to the Co-ordinated Universal Time (UTC).

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a standard means for representing local time differentials to facilitate interchange of data among data systems. Specifically, it is intended to :

a) reduce the time required to record and/or format local time expressions, relate them to the Co-ordinated Universal Time and transmit them;

b) improve clarity and accuracy of interchange;

c) minimize the amount of human intervention required for communicating time expressions;

d) reduce costs.

This International Standard does not prescribe file sequences, storage media, programming languages, or other features of information processing to be used in its implementation.

The use of this International Standard to represent local time differentials does not ensure that the representation is accurate.

2 REFERENCES

This International Standard is designed to be used in conjunction with the following International Standards when representing data-time groups :

a) ISO 2014, *Writing of calendar dates in all-numeric form;*

b) ISO 2711, *Information processing interchange — Representation of ordinal dates;*

c) ISO 3307, *Information interchange — Representations of time of the day.*

ISO 3307 provides for the representation of local time and Co-ordinated Universal Time, to which this International Standard directly relates. Accordingly, users of this International Standard should also apply the provisions of ISO 3307.

3 REPRESENTATION OF A LOCAL TIME DIFFERENTIAL FACTOR (TDF)

The TDF expresses the difference in hours and minutes between local time and the Co-ordinated Universal Time (UTC) as defined in ISO 3307. It is represented by a four-digit number preceded by a plus (+) or minus (−) sign, indicating the number of hours and minutes that local time differs from the Co-ordinated Universal Time.

The TDF for the Co-ordinated Universal Time (UTC) is represented as +0000. Local times throughout the world vary from the UTC by as much as −1200 hours (west of the Greenwich Meridian) and by as much as +1300 hours (east of the Greenwich Meridian).

The TDF immediately follows the low-order (extreme right-hand) time element of the 24-hour clock expression.

4 EXAMPLES

a) The following example represents a local time of 2 hours 9 minutes and 23 seconds past noon in the U.S. Eastern Standard Time Zone (five hours different from the UTC and west of the Greenwich Meridian).

	Representation	
	Without separators	**With separators**
Local time with the time differential factor	140923−0500	14:09:23−05:00

b) The following example represents a local time of 2 hours, 9 minutes and 23 seconds past noon in Calcutta, India (five and one-half hours different from the UTC and east of the Greenwich Meridian).

	Representation	
	Without separators	**With separators**
Local time with the time differential factor	**140923+0530**	**14:09:23+05:30**

The convention (i.e. algorithm) for using this data element in arithmetic conversions from and to Co-ordinated Universal Time is as follows :

- when converting from local time to Co-ordinated Universal Time, algebraically subtract the TDF from the local time;
- when converting from Co-ordinated Universal Time to local time, algebraically add the TDF to Co-ordinated Universal Time.

Adjust for a change in date, where applicable, using base 24 mathematical logic.

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